
CLAIMS

What is claimed is:

1. A spring-loaded powder dispersion system for dispersing powder into a foot compartment of a shoe, the spring-loaded powder dispersion system comprising:
 - 5 a top portion having a breathable aperture therein;
an air passage portion, the air passage portion having elastically deformable side walls, an open top part, and an open bottom part, where the open top part and the open bottom part are substantially separated from one another and the open top part is in fluid communication with the breathable aperture of the top
 - 10 portion, and wherein the air passage portion selectively allows for air to be stored in the air passage portion or for air to pass through the air passage portion;
an elastically deformable housing having a top portion and a bottom portion, with the top portion of the elastically deformable housing in air-permeable communication with the open bottom part of the air passage portion,
 - 15 the elastically deformable housing containing a powder delivery medium; and
a springing means in contact with the bottom portion of the elastically deformable housing, whereby when the spring-loaded powder dispersion system is actuated, the springing means moves the elastically deformable housing, causing the powder delivery medium to release a specific powder which is passed
 - 20 from the elastically deformable housing through the breathable aperture into a foot compartment of a shoe where it is distributed about a foot.
2. A spring-loaded powder dispersion system as set forth in Claim 1, wherein the powder delivery medium is selected from a group consisting of charcoal and
- 25 baking soda.
3. A spring-loaded powder dispersion system as set forth in Claim 1, wherein the specific powder includes a powder selected from a group consisting of an anti-fungal powder, an anti-odor powder, a medicinal powder, and a scented powder.

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4. A spring-loaded powder dispersion system as set forth in Claim 1, wherein the top portion is substantially circular in shape and the breathable aperture is made of a porous material containing micro-holes.
- 5 5. A spring-loaded powder dispersion system as set forth in Claim 1, wherein the elastically deformable housing is constructed of plastic and comprises a plurality of compartments.
- 10 6. A spring-loaded powder dispersion system as set forth in Claim 5, wherein any compartment is interchangeable with any other compartment in the plurality of compartments, and where each compartment contains a powder delivery medium with a specific powder, where the specific powder of a compartment is different from the specific powder of other compartments, and where a compartment with a specific powder content may be placed in the elastically deformable housing at
- 15 any position.
- 20 7. A spring-loaded powder dispersion system as set forth in Claim 6, wherein the elastically deformable housing is configured such that a compartment containing a specific powder can be manually removed from the elastically deformable housing and replaced with another compartment containing a different specific powder.
- 25 8. A spring-loaded powder dispersion system as set forth in Claim 1, wherein the spring-loaded dispersion system is formed such that it is detachably attachable with a sole of a shoe or such that it is permanently attachable with a sole of a shoe.
- 30 9. A spring-loaded powder dispersion system as set forth in Claim 1, wherein when the spring-loaded powder dispersion system is actuated, the springing means, the elastically deformable housing, the air passage portion, and the top portion are

configured to generate an airflow through the spring-loaded powder dispersion system, thereby significantly preventing moisture from penetrating into the elastically deformable housing.

- 5 10. A spring-loaded powder dispersion system as set forth in Claim 1, wherein a height of the top portion is less than about 1/16 of an inch, a height of the air passage portion is less than about 1/8 of an inch, a height of the elastically deformable housing is less than about 1/8 of an inch, and a height of the springing means is less than about 1/4 of an inch.
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11. A spring-loaded powder dispersion system as set forth in Claim 1, where a moisture absorbent portion is attached above the top portion, whereby the moisture absorbent portion reduces an amount of moisture penetrating into the spring-loaded powder dispersion system.
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12. A spring-loaded powder dispersion system as set forth in Claim 11, where the moisture absorbent portion has a center aperture, the center aperture allows free passage of air and powder from the spring-loaded powder dispersion system into the foot compartment of a shoe.
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13. A spring-loaded powder dispersion system as set forth in Claim 12, wherein the moisture absorbent portion is filled with a highly absorbent material surrounded by a hydrophobic material in order to absorb and retain a substantial part of any moisture generated by the foot.
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14. A spring-loaded powder dispersion system as set forth in Claim 1, wherein the spring-loaded powder dispersion system comprises a pair of spring-loaded powder dispersion systems, the pair having a front system and a rear system, with the front system having a first springing means with a first bottom face and the
- 30 rear system having a second springing means with a second bottom face.

15. A spring-loaded powder dispersion system as set forth in Claim 14, where the first springing means and the elastically deformable housing have a springing diameter and a housing diameter, and where the springing diameter is greater than the housing diameter.
16. A spring-loaded powder dispersion system as set forth in Claim 15, where the front system and rear system have a front height and a rear height, and where the rear height is greater than the front height.
17. A spring-loaded powder dispersion system as set forth in Claim 16, wherein the first bottom face and the second bottom face have a layer of adhesive formed thereon, and where the first springing means is adhered with a top surface of a sole of a shoe near a front end thereof and a second springing means is adhered with the top surface of the sole of the shoe near a rear end thereof.
18. A spring-loaded powder dispersion system as set forth in Claim 1, where the springing means is coated with an anticorrosive material.
19. A spring-loaded powder dispersion system as set forth in Claim 2, wherein the specific powder includes a powder selected from a group consisting of an anti-fungal powder, an anti-odor powder, a medicinal powder, and a scented powder.
20. A spring-loaded powder dispersion system as set forth in Claim 19, wherein the top portion is substantially circular in shape and the breathable aperture is made of a porous material containing micro-holes.
21. A spring-loaded powder dispersion system as set forth in Claim 20, wherein the elastically deformable housing is constructed of plastic and comprises a plurality of compartments.

22. A spring-loaded powder dispersion system as set forth in Claim 21, wherein any compartment is interchangeable with any other compartment in the plurality of compartments, and where each compartment contains a powder delivery medium with a specific powder, where the specific powder of a compartment is different from the specific powder of other compartments, and where a compartment with a specific powder content may be placed in the elastically deformable housing at any position.
23. A spring-loaded powder dispersion system as set forth in Claim 22, wherein the elastically deformable housing is configured such that a compartment containing a specific powder can be manually removed from the elastically deformable housing and replaced with another compartment containing a different specific powder.
24. A spring-loaded powder dispersion system as set forth in Claim 23, wherein the spring-loaded dispersion system is formed such that it is detachably attachable with a sole of a shoe or such that it is permanently attachable with a sole of a shoe.
25. A spring-loaded powder dispersion system as set forth in Claim 24, wherein when the spring-loaded powder dispersion system is actuated, the springing means, the elastically deformable housing, the air passage portion, and the top portion are configured to generate an airflow through the spring-loaded powder dispersion system, thereby significantly preventing moisture from penetrating into the elastically deformable housing.
26. A spring-loaded powder dispersion system as set forth in Claim 25, wherein a height of the top portion is less than about 1/16 of an inch, a height of the air passage portion is less than about 1/8 of an inch, a height of the elastically

deformable housing is less than about 1/8 of an inch, and a height of the springing means is less than about 1/4 of an inch.

- 5 27. A spring-loaded powder dispersion system as set forth in Claim 26, where a moisture absorbent portion is attached above the top portion, whereby the moisture absorbent portion reduces an amount of moisture penetrating into the spring-loaded powder dispersion system.
- 10 28. A spring-loaded powder dispersion system as set forth in Claim 27, where the moisture absorbent portion has a center aperture, the center aperture allows free passage of air and powder from the spring-loaded powder dispersion system into the foot compartment of a shoe.
- 15 29. A spring-loaded powder dispersion system as set forth in Claim 28, wherein the moisture absorbent portion is filled with a highly absorbent material surrounded by a hydrophobic material in order to absorb and retain a substantial part of any moisture generated by the foot.
- 20 30. A spring-loaded powder dispersion system as set forth in Claim 29, wherein the spring-loaded powder dispersion system comprises a pair of spring-loaded powder dispersion systems, the pair having a front system and a rear system, with the front system having a first springing means with a first bottom face and the rear system having a second springing means with a second bottom face.
- 25 31. A spring-loaded powder dispersion system as set forth in Claim 30, where the first springing means and the elastically deformable housing have a springing diameter and a housing diameter, and where the springing diameter is greater than the housing diameter.

32. A spring-loaded powder dispersion system as set forth in Claim 31, where the front system and rear system have a front height and a rear height, and where the rear height is greater than the front height.

5 33. A spring-loaded powder dispersion system as set forth in Claim 32, wherein the first bottom face and the second bottom face have a layer of adhesive formed thereon, and where the first springing means is adhered with a top surface of a sole of a shoe near a front end thereof and a second springing means is adhered with the top surface of the sole of the shoe near a rear end thereof.

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34. A spring-loaded powder dispersion system as set forth in Claim 33, where the springing means is coated with an anticorrosive material.

15 35. A powder dispersion system for dispersing powder into a foot compartment of a shoe, where the shoe contains a springing means imbedded into an interior of a sole of the shoe, the powder dispersion system comprising:

a top portion having a breathable aperture therein;

20 an air passage portion having elastically deformable side walls, an open top part, and an open bottom part, where the open top part and the open bottom part are substantially separated from one another, with the open top part in fluid communication with the breathable aperture of the top portion, and wherein the air passage portion selectively allows for air to be stored in the air passage portion or for air to pass through the air passage portion;

25 an elastically deformable housing having a top portion and a bottom portion, with the top portion of the elastically deformable housing in air-permeable communication with the open bottom part of the air passage portion, the elastically deformable housing containing a powder delivery medium; and

30 a springing means embedded into an interior of a sole of a shoe, the springing means being in fluid communication with the bottom portion of the elastically deformable housing, whereby when the powder dispersion system is

actuated, the springing means moves the elastically deformable housing, causing the powder delivery medium to release a specific powder which is then passed from the elastically deformable housing and through the breathable aperture into a foot compartment of a shoe where it is distributed about a foot.

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36. A powder dispersion system as set forth in Claim 35, where the springing means is coated with an anticorrosive material.

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37. A spring-loaded powder dispersion system for dispersing powder into a foot compartment of a shoe, the spring-loaded dispersion system comprising:

a top portion having a breathable aperture therein;

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an air passage portion having elastically deformable side walls, an open top part, and an open bottom part, where the open top part and the open bottom part are substantially separated from one another, with the open top part in fluid communication with the breathable aperture of the top portion, and wherein the air passage portion selectively allows for air to be stored in the air passage portion or for air to pass through the air passage portion;

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an elastically deformable housing having a top portion and a bottom portion, with the top portion of the housing in air-permeable communication with the open bottom part of the air passage portion, the housing containing a powder delivery medium and a springing means; whereby when the spring-loaded powder dispersion system is actuated, the springing means pushes air through the elastically deformable housing, causing the powder delivery medium to release a specific powder, which is passed from the elastically deformable housing through the breathable aperture into a foot compartment of a shoe where it is distributed about a foot.

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38. A spring-loaded powder dispersion system as set forth in Claim 37, where the springing means imbedded into the elastically deformable housing is coated with an anticorrosive material.

39. A method for forming a spring-loaded powder dispersion system, comprising acts of:

selecting a top portion with a breathable aperture;

5 selecting an air passage portion having elastically deformable side walls, an open top part, and an open bottom part, where the open top part and the open bottom part are substantially separated from one another;

attaching the open top part of the air passage portion with the breathable aperture of the top portion;

10 selecting an elastically deformable housing having a top portion, a bottom portion, and containing a powder delivery medium;

attaching the top portion of the elastically deformable housing with the open bottom part of the air passage portion;

selecting a springing means; and

15 attaching the spring means with the bottom portion of the elastically deformable housing, whereby when the spring-loaded powder dispersion system is actuated, the springing means moves the elastically deformable housing, causing the powder delivery medium to release a specific powder which is passed from the elastically deformable housing through the breathable aperture into a
20 foot compartment of a shoe where it is distributed about a foot.

40. A method for forming a spring-loaded powder dispersion system as set forth in claim 39, further comprising acts of selecting a moisture absorbent portion, and attaching the moisture absorbent portion with the top portion, whereby the
25 moisture absorbent portion reduces an amount of moisture penetrating into the spring-loaded powder dispersion system.

41. A method for forming a spring-loaded powder dispersion system as set forth in claim 40, further comprising an act of adding an additional spring-loaded powder
30 dispersion system, thereby comprising a pair of spring-loaded powder dispersion

systems, the pair having a front system and a rear system, with the front system having a first springing means with a first bottom face and the rear system having a second springing means with a second bottom face.

- 5 42. A method for forming a spring-loaded powder dispersion system as set forth in claim 41, wherein in the act of adding an additional spring-loaded powder dispersion system, the first bottom face and the second bottom face have a layer of adhesive formed thereon, and where the first springing means is attached with a top surface of a sole of a shoe near a front end thereof and a second springing
- 10 means is attached with the top surface of the sole of the shoe near a rear end thereof.